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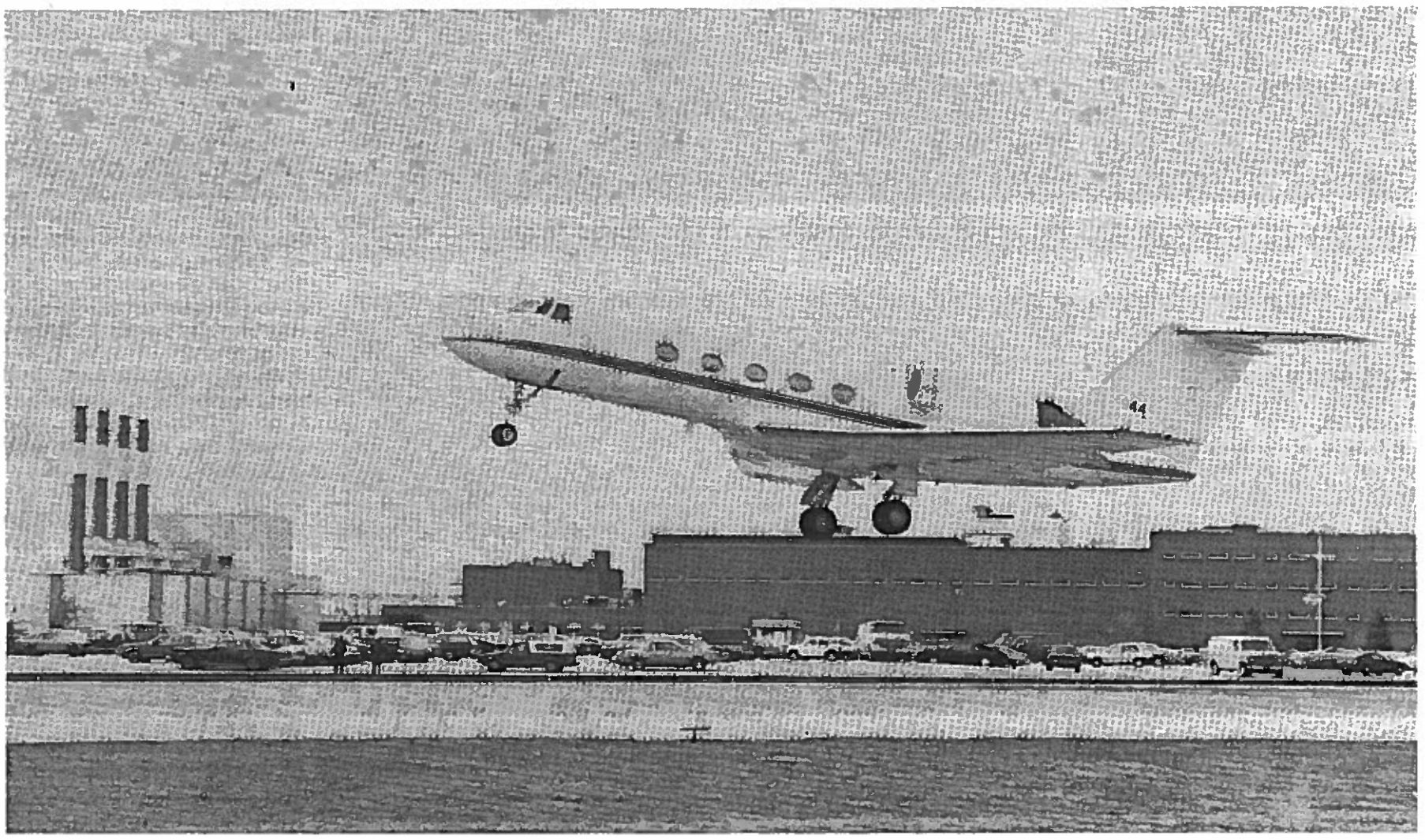


Ready for delivery. *The third Shuttle Trainer Aircraft to be rebuilt by Grumman recently took to the skies. The STA is used by the National Aeronautics and Space Administration to train Space Shuttle pilots. Delivery to NASA is scheduled for today. NASA's STA Project Pilot, Ken Baker, flew the STA-3 from Bethpage to Calverton assisted by Grumman Test Pilot Tom Gwynne.*

X-29 upgrade will extend flight envelope -pg.5

Space manufacturing: breaking new ground -pg.3

Co-op students get a head-start on careers -pg.6

'An appropriate time to move on'

Some days are easier to remember than others. For Gordon Ochenrider, February 28th is such a day. On February 28, 1955, he picked up his Grumman badge and embarked on an illustrious career that spanned three decades. Thirty years later — to the day, Ochenrider retired from Grumman.

The retired senior vice president-Washington Operations for Grumman Aerospace and Grumman Corporation vice president is establishing his own consulting business in Washington, D.C.

"Gordon has been at the center of every major Grumman business issue in Washington for the past 10 years," said Grumman chairman Jack Bierwirth, in October announcing Ochenrider's retirement period. "We've depended on his understanding of the Washington system, and we expect to continue to rely on him as one of his corporate clients.

"As special consultant to the chairman of the board, Gordon will play a major role in Grumman's relationships with the Congress, Department of Defense and other federal government agencies," states Bierwirth.

"My thirtieth anniversary seems an appropriate time to move on to a new opportunity that I've been considering for several years," says Ochenrider. "As a special consultant to Grumman, I'll be able to continue to play an active part for Grumman while also serving other clients with parallel interests."

Ochenrider's association with Grumman began long before he started working as an assistant administrator in Plant 4 Flight Test back in 1955. A graduate of the U.S. Naval Academy, he flew numerous Grumman planes during his 15-year naval career. It was during his last cruise in 1954 that he decided to go into industry.

In the South China Sea, two Grumman field reps — Jack Buxton (former Grumman Houston president, now Southeast Regional Office director) and Ralph Clark (now in the Washington, D.C. office) — convinced the lieutenant commander that the best place to be was at the Long Island-based aircraft company named Grumman.

"When I got back to the States, I went to Grumman and asked for 'any job, at any salary,' " says Ochenrider. "I was married, and had three children. I wanted to settle down."

After a few years in Flight Test, the former jet pilot was tapped to be a senior European representative in the Grumman effort to sell the Super Tiger overseas. Ochenrider moved his family to Geneva, Switzerland, and for the next two-and-a-half years proceeded to try and market the nimble Grumman jet, plus Gulfstreams, S-2F Trackers, and the SA-16 Albatross.

"It really marked the first time Grumman entered the international market," reflects Ochenrider. But he admits that they struggled in the international marketing arena. "We were out-politicked. We just didn't understand international politics at that time. There was a lot of bartering. We did not have the experience — we had to learn.

"Prior to that time, international sales had sort of fallen in our laps," recalls Ochenrider. "If a foreign country wanted an antisubmarine aircraft, they would go to the Navy and the Navy would point them in the direction of Grumman."

Though the young fledgling team didn't sell any Super Tigers, it did manage to sell some S-2s and Albatrosses — and set the foundation for today's Grumman International.

Upon his return to Long Island, he joined the newly established Business Development team, and eventually, as vice president, headed up the department in the late Sixties. It was during this time that he started trekking down to the nation's capital several times a week.

During the F-14 financial crises in early Seventies, the company was forced to close down its Washington Office for austerity purposes. Then, in July, 1974, the new Washington office was established, and Ochenrider permanently moved down to D.C. Dealing with Capitol Hill proved to be his strong suit. He rapidly became friendly with many congressmen, senators, and congressional staff personnel. "Learning the ins and outs of the intricacies of dealing with the federal government is like going to college all over again," he declares.

His job was to formulate Grumman's strategy for dealing with the Congress on defense matters. He had to coordinate Washington political activities with the total corporation so that Congress received a single message from Grumman. The Washington veteran did his job well. In a 1982 *Washingtonian* magazine article, he was ranked as the most influential defense lobbyist in the capital.

Communication and team work are the keys, insists Ochenrider. He says that credibility is the key to building up a good relationship with Congress. And that's accomplished through years of honest communication, he adds. "Teamwork coordination of all the political players is vital — every day in Washington is like Super Bowl Sunday. You are playing for big stakes," he says.

Solidfying relationships

During his tenure in the Grumman office, Ochenrider benefited from the goodwill generated by the Grumman Political Action Committee (PAC). He is a strong advocate of PACs. "PACs, when administered properly, can be very effective in broadening and solidifying professional relationships with key members of Congress," Ochenrider states. "They are helpful in furthering better communication."

Gordon Ochenrider

"Self satisfaction is the reward for this job," he adds. "Satisfaction that you're not only helping improve the defense posture of the United States, but also providing more jobs for the Grumman family."

Ochenrider's popularity and effectiveness were evident at a recent Washington reception given in his honor by Chairman Jack Bierwirth. Grummanites, senators, congressmen, and federal officials all came to pay tribute to Ochenrider and his wife Betty.

Reflecting on his 30-year career at Grumman, Ochenrider recalls: "After I returned from Europe in the late Fifties, I said to Jake Swirbul [then Grumman president], 'You gave me a million dollar education [with that assignment].' It's something you can't buy in college. It's raw experience. And Jake Swirbul said to me, 'We'll get back our money's worth many times over.' — I hope they did."

Project Sterling surpasses goals in '84

In 1984, Grummanites submitted 2,723 employee suggestions which accounted for savings of $6,832,205. In return, the company awarded $141,438 to Grumman suggesters. The 1983 results were slightly higher — 2,809 submittals, $147,394 in awards, $7,318,560 in savings.

"While the actual numbers were somewhat lower than last year, the average final savings per approved suggestion increased over last year by almost seven percent," states John Alvar, manager of Motivational Programs.

Meanwhile, the cost reduction program once again exceeded its goals in 1984. A goal of $29,946,500 was easily attained; 1984 cost savings totalled over $39.7 million.

Here's a quick breakdown of departments, the total savings achieved, and the number of suggestions approved (in parentheses):

Corporate Staff and Field Ops. — $66,673 (1).

Personnel and Administration — $165,026 (13).

Information Resource Management — $15,767 (1).

Security and Corporate Services — $58,580 (12).

Marketing and Advanced Technology Development — $5,100 (2).

Treasurer — $20,217 (3).

Procurement Operations — $1,198,663 (13).

Facilities Engineering — $399,899 (3).

Business Operations — $40,670 (2).

Configuration Data/Management — $58,873 (4).

Pt. Mugu Operations — $80,179 (47).

Bethpage Operations — $719,617 (302).

Manufacturing and Material Engineering — $91,281 (31).

Product Development Operations Center — $45,956 (20).

Engineering and Software — $572,776 (26).

Flight Test — $556,742 (5).

Integrated Logistics Support — $539,968 (23).

Material Management — $328,869 (29).

Corporate Quality and Safety Ops. — $149,941 (15).

Calverton Ops. — $189,699 (175).

Great River Ops. — $1,034,215 (150).

Milledgeville Ops. — $351,143 (198).

Stuart Ops. — $115,146 (79).

Houston — $30,205 (8).

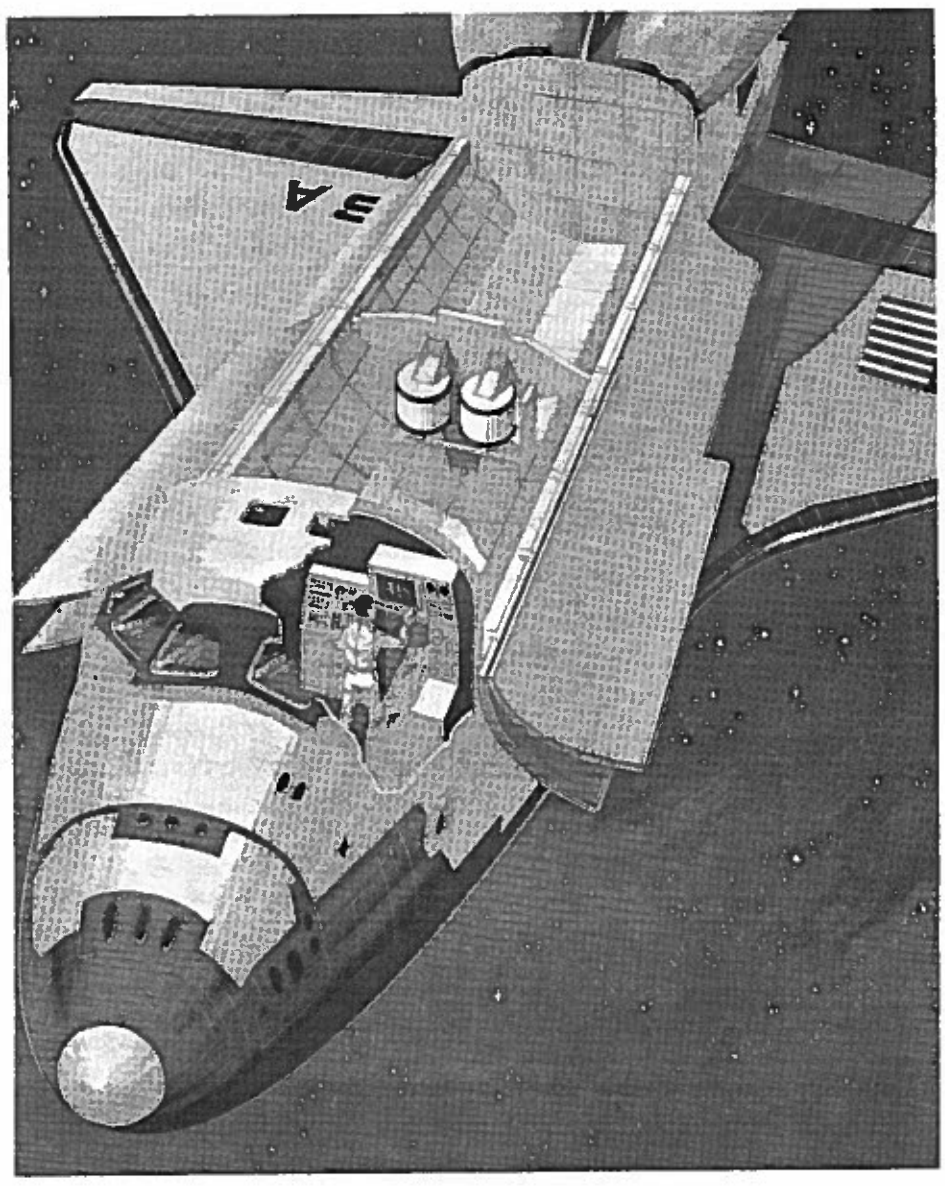
Making high-tech metals in space

Someday, Grumman may well operate a manufacturing facility in space, as the result of an agreement the company recently signed with the National Aeronautics and Space Administration (NASA).

The memorandum of understanding, or "MOU," commits Grumman to prepare a joint endeavor agreement with NASA for a series of experiments, which would be conducted aboard the Space Shuttle beginning in 1987. The experiments will involve the growth of gallium arsenide semiconductor crystals in a process called directional solidification.

"This agreement represents our first step toward becoming an active participant with NASA in space commercialization," declares Grumman President George Skurla. "It also affirms our belief that the low gravity of space offers great potential for manufacturing."

Representing NASA at the signing was Bud Evans, deputy associate administrator-Space Commercialization Programs. Evans is, incidentally, the son of the late Lew Evans, president of Grumman from 1966 to 1971, and chairman until his death in 1972. Also on hand were Lou Hemmerdinger, Grumman's program manager of Space Commercialization; Dick Kline, director of Space Station Programs; John Purcell, director of Space Marketing, Sam Abraham, Space Commercialization marketing manager; Dr. Dick Scheuing, vice president, Corporate Research Center; and Dr. Dave Larson, program manager of Microgravity Research.



New frontier. *Grumman's first experiment with directional solidification of gallium arsenide will fly aboard the Shuttle in 1987. Ingots of metal will be produced in two small, electronically activated furnaces. (Artwork by Bob Whitehead)*

Informal support

The present agreement is basically informal. NASA and Grumman are expected to sign a formal joint endeavor agreement later this year.

"All the MOU says is that we are going to formulate a joint endeavor agreement with NASA," says Hemmerdinger. "It also commits NASA to assist us in providing all their expertise and their assistance in trying to get our experiment on board the shuttle."

The physical process of "directional solidification" uses precisely controlled temperatures to melt a rod of metal, then slowly solidify it from one end to the other. The process is now actually being used by industry to produce gallium arsenide. The material is in limited use for radar, fiber optics, and solar cells, but has the potential to supplant silicon in the very high technology microcircuit chip market.

Such chips would form the guts of supercomputers and signal processors offering faster response times, lower power consumption, and even greater miniaturization than today, as well as radiation-hardness. The problem is, earthbound laboratories haven't been able to produce uniform gallium arsenide of a high enough quality for it to attain more widespread use.

Greater purity

But in the microgravity condition of space, the material's crystalline structure will align in such a fashion as to virtually eliminate imperfections. Due to its many potential uses, gallium arsenide is also extremely valuable. This is a crucial factor since the yield from any space factory would be small — at least initially.

"That is why we honed in on gallium arsenide as being the material of interest for the first experiments," says Hemmerdinger.

The experiment will utilize a small, electronically activated furnace developed and patented by the Mellen company and reconfigured to Grumman specifications. Since it operates under computer control, it offers very precise temperature control. Material will be heated to 1,250 degrees Centigrade (2,280 degrees Fahrenheit), or "white hot."

Each furnace will produce a small ingot of gallium arsenide — measuring about one and one-quarter inches in diameter. Even at that size, it is large in comparison to other space commercialization experiments. This size will permit more accurate testing of the process for future scale-up and material characterization.

Years of research

Grumman has been involved in space commercialization, via both corporate and government funds, for about a decade. Research scientists Dr. Phil Adler and Dr. Dave Larson have experimented extensively with directional solidification. Larson has also performed experiments with a variety of substances under direct contract with NASA. These tests have been conducted on Skylab, the Apollo-Soyuz mission, and on seven SPAR rockets providing three to five minutes of microgravity conditions.

More experiments will fly aboard the Shuttle this summer and next year. "Larson is one of the few private-sector scientists who has been contracted directly by the government for research," Hemmerdinger notes.

Larson will head the new Microgravity Research Center to be located in the addition to Plant 26 that's now under construction. Hardware for the space process will be built as commercial equipment at the Corporate Development Center in Bohemia. In charge of that effort will be Greg Knowles.

Reaching out

In a separate but related project, Grumman has promoted space commercialization to other companies for about two years. This is under the auspices of a NASA Commercial User Development Contract, for which Grumman is teamed with the Big Eight accounting firm Coopers & Lybrand.

The Grumman/C&L team has made sales pitches to 23 companies thus far, of which 13 have indicated some level of interest. Grumman is assisting Alcoa on directional solidification experiments involving aluminum, and the two companies will meet next month to discuss the results. Another company that was sold on space commercialization is 3M, which now has about 40 people working on a proprietary project and plans to spend $150 million in research funds over the next 10 years.

"No one has ever thought about microgravity before," Hemmerdinger muses. "Not until you get yourself involved do you really see there are avenues that you've never explored that may be feasible. So this contract is really an education process — educating companies."

Pioneers

Companies that have already signed joint endeavor agreements with NASA are McDonnell Douglas, Microgravity Research Associates, and Fairchild. McDonnell Douglas's project concerns pharmaceuticals. The company has flown four exper-

Continued on next page

Grumman, NASA sign space commerce pact

Continued from page 3

iments aboard the Shuttle; its last one flew a few months ago and became contaminated. A reflight is scheduled later this year.

Microgravity Research Associates seeks to produce gallium arsenide in space, but via an entirely different process than Grumman. That process is called electro-epitaxy and is somewhat analogous to electroplating. And Fairchild hopes to build and fly the Leasecraft, free-flying satellite, which companies would rent for scientific and manufacturing purposes.

Grumman's first experiment in 1987 aboard the Shuttle will be a proof of concept step — to demonstrate that crystals of gallium arsenide can indeed be produced in space.

In Hemmerdinger's view, there is still much work to be done in educating the public about the benefits of space commercialization. He notes there has been a fair amount of media coverage, but the topic has been over-hyped.

"I don't know if we'll meet the public's expectations," he cautions. "People don't totally comprehend space commercialization, and it seems farfetched. But it definitely captures their imaginations. For the first time, they see a use for space and a direct benefit to be gained from it. So, there's a lot of interest out there."

"The whole business of space commercialization moves very slowly," he adds. "That's because it's a high risk business. We haven't seen the payoffs yet . . . but we will."

New venture. *Grumman President George Skurla signs space commercialization memorandum. Looking on are Bud Evans (front R), NASA deputy associate administrator-Space Commercialization Programs; Dr. Dave Larson (rear L), program manager-Microgravity Research at Grumman, and Lou Hemmerdinger, program manager, Space Commercialization.*

Attention, investors — your votes are needed

If you are a member of the Grumman Employee Investment Plan, you have a vote at the upcoming annual shareholders meeting.

The meeting is scheduled for 2 p.m. Thursday, April 18, in Plant 4. Bankers Trust Company, agent for the trustees of the Investment Plan, has begun mailing members their proxy statements and confidential voting instruction forms.

All plan members are urged to return the completed voting instruction forms by April 12 to Bankers Trust in the self-addressed, postage-paid envelopes that accompany the proxy statements. Your vote is confidential and neither the company nor the trustees knows how you vote. The votes are summarized by Bankers Trust for the trustees. Unvoted EIP shares get "voted" by the trustees in the same proportions as those that are voted (with the exception of PAYSOP shares, which cannot by voted unless voting instructions have been received).

Bigger turnout sought

Typically, only some 40 percent of the members exercise their vote. Bob Bradshaw, vice president-secretary of Grumman Corporation and a trustee of the Investment Plan, wants to see a big increase this year, though as a plan trustee, he is neutral on how shareholders should vote.

"We would always prefer to rely on participants' actual votes than to have to extrapolate to obtain the final count," he comments. "This year it is especially important that every plan member takes the time to vote. Two amendments to the company charter are on the ballot, besides the straightforward issues that come up at every annual meeting — the election of directors to the board and the appointment of the outside auditors."

These proposals relate to amendments to the company's Restated Certificate of Incorporation. They are disclosed in detail under the heading, "Proposed Amendments to the Corporation's Restated Certificate of Incorporation" in the proxy statement.

The first amendment will establish certain minimum price and other requirements for certain business combinations.

The other amendment will establish certain requirements for calling special shareholder meetings, for shareholders' nominations of directors, and proposals of certain actions for consideration at shareholders meetings, as well as other related matters.

The proxy statement now in the mail explains the two amendments in detail. "The subject matter is not easy reading, but it's very important," notes Howard Dunn, vice president-Audit and also a plan trustee. "On issues such as this, shareholders should exercise their vote. Steps have been taken to ensure that employee participants receive their proxy materials in a timely manner, giving them sufficient opportunity to review the pros and cons and cast their votes."

About 10 million shares of Grumman stock are held in trust by the Employee Investment Plan, out of a total of 28.5 million. Plan members include 22,465 active employees and 2,064 retirees. So, members do have a strong voice in determining what is decided at the annual meeting.

Bradshaw stresses that the voting process is strictly confidential. The voting instruction forms are handled by an independent party, Bankers Trust. Neither Grumman nor the trustees is allowed access to confidential voting instructions.

Again because the EIP shares are held in trust for individual members, being a plan member doesn't automatically entitle participants to attend the annual meeting. Only those people who own shares of record—shares purchased outside the Investment Plan prior to the record date of March 1, 1985 — are eligible to attend.

Grummanites who fall into the latter category and who wish to attend the meeting should present their proxy cards to any Employee Services office before April 12 in order to preregister. Proxy cards should then be mailed immediately in the return envelope provided.

Personals

My family and I wish to express our sincere thanks and grateful appreciation for your thoughtfulness and kind expressions of sympathy during the recent loss of my father. Joe Busuttil

To all his friends and co-workers we wish to express our sincere appreciation for the kindness, support and expressions of sympathy given us on the sudden death of Bob Nowak, (typewriter department). Thank you all, who shared our burden of sorrow due to the untimely loss of a good man, husband, father and friend. Betty Nowak and Family

My family and I wish to express our sincere thanks and appreciation to my friends and co-workers for their kindness and sympathy during the recent loss of my father. John Ostaszewski

My family and I wish to express our appreciation to the ESO, our Grumman friends and co-workers for their comforting expressions of sympathy during the recent loss of my mother. Eli Landau

We would like to thank our friends and co-workers for their generous support during the recent loss of our father Nicholas Forte. Marie Forte and Anna Bonura

My family and I want to thank former co-workers for their kind expressions of sympathy during the recent loss of my husband. Mildred VanNostrand

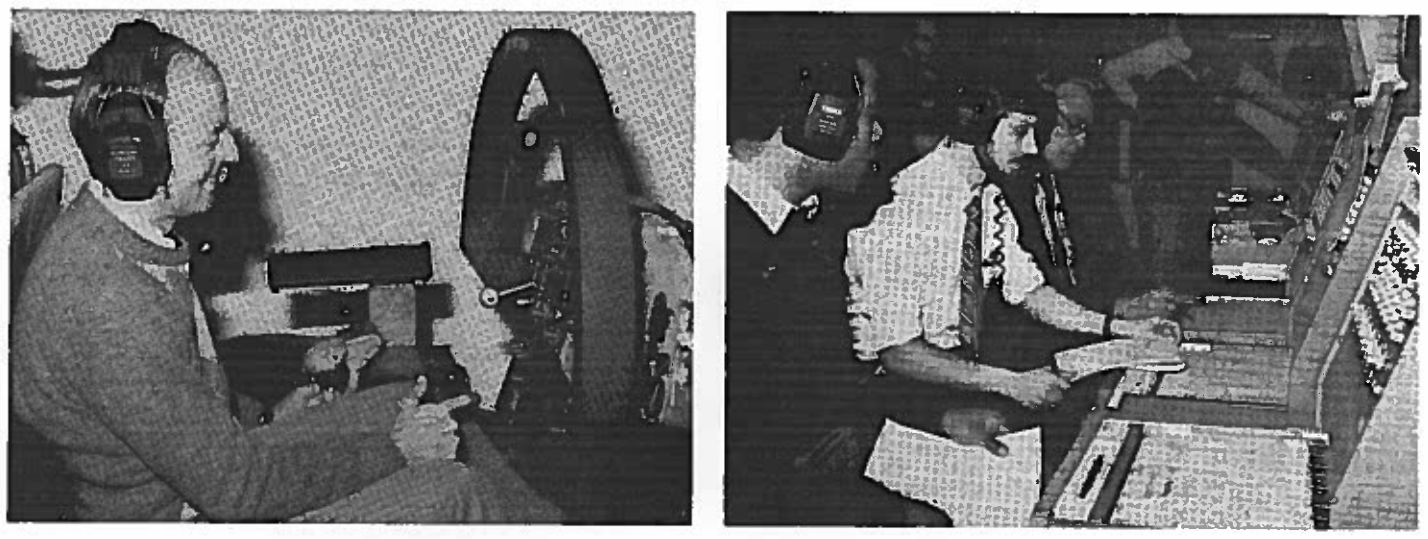
I wish to thank my friends, co-workers and ESO for their kind expressions of sympathy upon the recent passing of my father Martin Freyer. Robert Freyer

Ann's family and I wish to thank my friends and the ESO for their kind expressions of sympathy during the recent loss of my wife Ann. Harvey Knopf

Mod package boosts X-29's capabilities

The X-29 advanced technology demonstrator will soon undergo a modification to its flight control system, giving it total fail-safe capability in transonic and supersonic flight.

The project is officially known as the Extended Envelope Modification, and represents an upgrading of the analog hardware and digital software of the flight control system. Basically, it will entail installation of three analog air data sensors to provide variable gain in the analog backup mode. These sensors will utilize the same probes on the exterior of the aircraft — one on the nose, and two on either side of the windscreen — that are now connected to the high-accuracy digital sensors (HADS) located just forward of the cockpit.



Precise testing. *Inside the Motion-Based Simulator, NASA Pilot Rogers Smith "flies" a math model of the X-29's characteristics. Next door, Todd Cobb, Bob August, and Mitch Lopatoff monitor the results.*

Triple redundancy

The package will augment the analog and digital reversion modes of the X-29's flight control system. That system is *triply redundant* to provide ample backup for safe flight.

The X-29 actually has three flight control systems, each consisting of a digital and an analog computer and their power supplies. All three operate constantly but in only one mode at once — analog or digital. If one digital system fails, the remaining two can take over, while if two digital systems fail, the flight control system reverts to the analog mode.

The analog mode was originally designed to function without air data, which was then determined to be satisfactory. However, the program decided a year and a half ago to add the air data systems as an upgrade.

"At that point, it was too late to do the upgrade without impacting the schedule of the first flight," notes Arnold Whitaker, flight control system project engineer for the X-29. "We decided to do the upgrade as a field modification, minimizing its impact on the flight schedule."

Variable, as opposed to fixed, gain is a feature of the flight control system feedbacks and pilot controls. It is somewhat analogous to an amplifier in that it "turns up" the data received by sensors. The primary operating mode of the X-29 has always been equipped with variable gain. It enables the flight control system to better stabilize the aircraft by adapting it to various flight conditions. Equipping both the reversion modes with variable gain will thus provide total fail-safe operability.

Another new feature, Precision Approach Control (PAC), will be added at the same time. PAC will simplify the X-29 landing task and is functionally separate from the Extended Envelope Modification. It is considered state-of-the-art and is just beginning to be used by military aircraft. PAC is especially attractive to Navy pilots since it would augment their carrier-landing skills.

The Extended Envelope Modification will enable the aircraft to achieve its full capabilities. "The real flight envelope will be that of a typical high performance fighter," Whitaker says. "The exact figure is classified, but it is well into the supersonic range."

Hardware design for the Extended Envelope Modification system was completed in April of last year, while software requirements design was finished in December. Presently, hardware and software systems are being evaluated in the Systems Integration lab in Plant 14. Last month, a group of pilots from Grumman and the customer completed a multi-pilot evaluation of the system.

The modification package will first be installed at Calverton onto the second, backup aircraft, ensuring a proper hardware fit. Final installation onto the first aircraft will be done in May at Edwards Air Force Base, California, by Grummanites. Prior to flight tests, validation tests of the hardware and software will be repeated to prove out system functions. First test flight of the modified X-29 will take place sometime in June.

Grumman's original contract calls for four test flights, which it has completed. All were taken within an envelope of Mach .6 and 30,000 feet altitude. Grumman is now under contract to provide NASA and the Air Force with support of their flight test program.

After the modification in May, Grumman will complete two additional test flights.

X-29 'soars' in simulated flights

The X-29 Integration Lab in Plant 14 recently hosted seven Grumman and government pilots, who put the plane's modified flight control system through a series of tests.

Participating in the four-day evaluation were Grumman pilots Tom Gwynne, Chuck Sewell, and Kurt Schroeder; Navy Lt. Cdr. Ray Craig; Air Force Lt. Col. Ted Wierzbanowski; and NASA pilots Steve Ismael and Rogers Smith.

"The multipilot evaluation is a milestone in the development of the Extended Envelope Modification," commented Flight Controls engineer Bob August. "The modification has been in development for over a year. Having completed that, we're basically inviting the customer in to see what we've designed."

The tests did not utilize the actual hardware/software package that makes up the X-29's Flight Control System, but rather, a mathematical model devised to mimic its characteristics.

The tests were conducted with Plant 14's Motion-Based Simulator. This is a huge spherical enclosure surrounding the pilot that can move omnidirectionally in tune with the simulated aircraft's responses. For the multipilot tests, the simulator operated in a stationary mode with the visual scene projected on the inside of the sphere.

The simulator is wired to computers and readout equipment in the next room providing precise measurements of such characteristics as roll rate, pitch rate, velocity, and altitude. Several video monitors show what's going on in the cockpit, and the engineers listen and respond to the pilots' comments through headphones.

Each of the seven pilots flew the same basic test syllabus which took about three to four hours to complete. The tests put the control system math model through a gamut of mock flights, which included flying quality evaluations at subsonic, transonic, and supersonic speeds, as well as landings.

Paul Martorella, Flight Sciences engineer on the X-29 program, commented that the evaluation went very smoothly. It is still uncertain whether another multipilot evaluation, of the actual hardware/software, will be scheduled. "Now that the customer has approved the extended envelope design, testing of the actual hardware/software will begin," he said.

Eager apprentices. *'Through the Cooperative Education Program, Grumman is training the engineers of the future in a wide variety of engineering disciplines,' says Ed Lobl, administrator for the Co-Op program. Lobl (seated top R) oversees the 'on-the-job' training of the more than 30 college students currently working in the program in different departments throughout the company.*

Students gain valuable work experience through the Cooperative Education Program

While strolling through an engineering lab or a computer center, if you happen to notice a fresh face young enough to conjure up memories of your college days, you may well be gazing at just that — a college student. Through a special Engineering Cooperative Education Program, the company is currently employing some 36 college students from various institutions of higher learning as apprentice engineers.

The program had its beginnings back in Grumman's busy "LEM days," when, in it's heyday, between 80 and 100 college students were aboard. During the general business slowdowns in the mid- to late '70s, the program atrophied only to be brought back to life in 1981 as a Technical Operations project.

A natural for Grumman

"This program is a natural for Engineering. We get fresh young people who we can mold into the kind of engineers Grumman needs and at the same time give them the kind of hands-on learning experience that they couldn't possibly get out of textbooks," says Ed Lobl, administrator for the Co-Op Education program.

Lobl points out that the Cooperative education program offers a unique opportunity, both for the students and for Grumman. "These kids get real live work experience in a variety of engineering disciplines. Grumman gets the opportunity to train young engineers in the way that we do things so that when they graduate, and hopefully return to the company as full fledged engineer employees, they can fit right in;" he says.

In fact, Lobl notes, a high percentage of the co-op students do return to Grumman after graduation as employees. "The ratio of students who return as employees is really remarkable — something like eight out of ten," he asserts. The fact that the returning students have already been "Grummanized" — trained in the company's style of operating — is a "real bonus for Grumman," Lobl adds.

PR payoff

The program's payoff to Grumman also comes in the form of good public relations with other engineering students back on the home campuses of the co-op workers. "When the students go back to their colleges with a good impression of Grumman they spread the word to their peers. It's like a million dollars worth of 'P.R.' for us," says Lobl.

The "good word" about the company and the co-op program has been so successful, in fact, that Lobl says the company is regularly "inundated" with requests when the department conducts its annual interviews for enrollment.

Selective recruiting

"The fact of the matter is, we could probably have a lot more students in this program if we were not as selective as we are," says Lobl. The program currently limits its recruiting efforts to the top engineering colleges in the Northeast and, to a lesser extent, in the South. "The reason we do this," he points out, "is because we have found that we are more successful in attracting and holding onto people who are originally from this area. It doesn't hurt, of course, that we have some of the top engineering schools in the country located here in the Northeast," he notes.

The program is primarily limited to Grumman's Long Island operation sites, though two students from the Georgia Institute of Technology are currently alternating cooperative education internships at the company's Milledgeville, Georgia composite manufacturing facility. Two Florida college students are also enrolled in the program at Grumman's Stuart plant.

Valuable assets

All of the student engineers in the program are given actual work assignments and expected to perform as engineers. "We give them a considerable amount of responsibility in their jobs and they seem to thrive on it — really pushing themselves to excel and earn the respect of their engineer teachers. They work very hard trying to learn as much as possible while they are here and their motivation makes them valuable assets to Grumman," says Lobl.

The students are paid on a competitive basis with other cooperative education programs currently being offered by such local companies as IBM, AIL and Eaton.

Grumman's program, says Lobl, has the advantage of offering a very wide spectrum of engineering disciplines for the students to experience, ranging from aerodynamics to structures and including such diverse areas as software and computer engineering, electronics, hydraulics, and a host of other fields.

A true apprenticeship

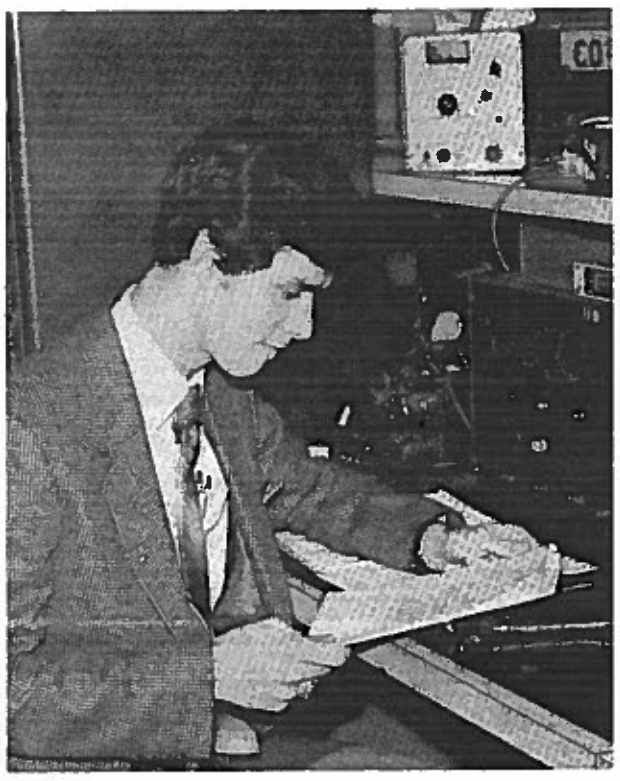
Along with responsibility, the students are given extensive instruction and support from the Engineering, Integrated Logistic Support (ILS), and Manufacturing-Engineering departments as well as from the individual engineers working in the areas where the students are assigned. "It's a true apprenticeship wherein they can learn from seasoned professionals and actually see the end results of their efforts," stresses Lobl.

Lobl notes that the cooperative education program is continuing to grow and develop. "Each year we learn more and more from the students about how we can best adapt the program to their and Grumman's needs," he says. Through the program students also learn what courses back in school will best help them out in the field.

"We're getting more insights into what the company can do to attract and hold the cream of the country's college engineering crop," says Lobl. "And the kinds of students we are getting is always changing. We're seeing more female engineering students, and that is a good change.

"The whole idea of the program is to keep a steady flow of fresh engineering blood coming into the company. After all, these young engineers and their new ideas will be the future of Grumman."

Co-op students get a 'big head start'



A great opportunity. *Ray Travelyn is a college junior from the University of Bridgeport currently working in Plant 7 who says 'there is a lot happening in Grumman these days, and I would certainly like to be a part of it when I graduate.'*

Ray Travelyn is a junior at the University of Bridgeport in Connecticut majoring in electrical engineering. He is also a cooperative education program student engineer working in Calverton's Plant 7.

"Right now I am working with group leader Dave Wolf in the Navigation and Controls department going over test procedures for the MA-1 compass used in the A-6. It's very interesting work and it gives me a chance to really apply some of the engineering theories we learn in school to a real job," says Travelyn.

A native of Manorville, Long Island, Travelyn says he transferred from Suffolk Community college to the University of Bridgeport specifically because Bridgeport offered the co-op program. "I saw the Cooperative Education program outlined in a Bridgeport college catalog and it seemed like a great opportunity to learn and get some real work experience at the same time. Earning some money to help pay for my tuition also seemed like a good idea," he notes.

Voluntary program

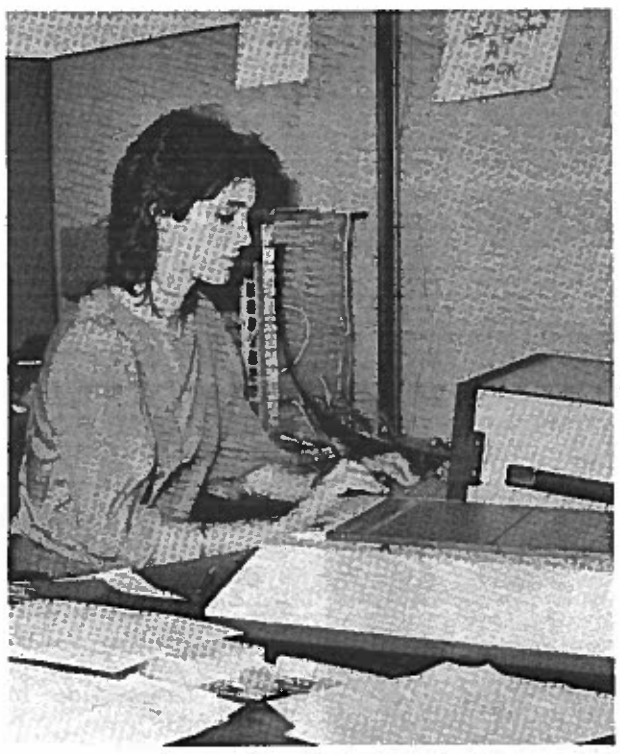
Though he is being paid while in the co-op program, Travelyn, as well as all the other students in the program, does not receive college credit. "It's a voluntary program and I take it on an alternating semester basis — one semester in school, then one semester working at Grumman. It stretches the time it takes to get a college degree from four to five years, but it gives me invaluable work experience."

Travelyn hopes to turn that work experience into a permanent career here at Grumman when he graduates from Bridgeport. "I really like the people in Grumman; everyone is very helpful and friendly here. There is a lot happening in the company too these days, and I would certainly like to be a part of it when I graduate," he states.

All in the family

Diane McDermott is from Huntington, L.I., and an engineering major at the University of Bridgeport. McDermott transferred to Bridgeport after completing two years at the New York State University at Binghamton.

A rookie in the co-op program, McDermott was coaxed into interviewing for a spot with Grumman by her father, Frank McDermott, an engineer in Calverton who works on test equipment for the F-14 and A-6 programs. "My father has been a Grummanite for a long time and he suggested that if engineering was where I wanted to make a career, then the co-op program was the best place to get my feet wet," she says.



Big head start. *Diane McDermott is working for the Plant 35 Computer Design department as a Co-op student. 'You learn so much more and retain it so much better when you actually do something as compared to just reading about it,' she says.*

After going through the standard co-op program interview, McDermott was hired by the Plant 35 Computer Design (CD) department. Since then she has been working on advanced aircraft designs for CD under the guidance of Principle Engineer Dr. William Vojir.

"I can't say enough about the experience. I really believe that I've learned a great deal more by actually doing the work than I could have just from lectures and textbooks. Dr. Vojir and everyone in the department is extremely supportive. They don't hesitate to take time out from what they are doing to explain something to me when I need help," she states.

McDermott says she believes the co-op program has already given her a "big head start," over people who have not been exposed to the work environment. "You learn so much more and retain it so much better when you actually do something as compared to just reading about it," she asserts.

"Getting paid for what I'm learning is also a very important aspect of the program. The money I earn helps pay for my tuition and gives me a feeling of independence that is so important in building confidence.

A veteran view

Peter Denardis, a junior from Northeastern University in Boston, is a veteran of the co-op program, having spent eight tours with Grumman.

"This is my third year in the co-op program because Northeastern starts you in your sophmore year. I really can't get enough of it. The work experience I've gained in the program has whetted my appetite to get out into the field and really make a career in engineering for myself," states an exuberant Denardis.

A mechanical engineering major at Northeastern and a native of Manhasset on Long Island, Denardis says the Grumman program has offered him a first hand look at a variety of engineering fields. Currently working in Plant 1 on the F-14D program for Environmental Control Systems where he is doing a second tour of duty, Denardis has worked previously in Mechanical Design on the C-2A and E-2C programs and on the X-29's hydraulic systems for Plant 5 Advanced Development.

Denardis says he is interested in working for Grumman when he graduates from college, but has not made any final decision on his career just yet. "I've tried to get as wide a scope of experience as possible so that I can make a decision as to what I want to specialize in for a career.

"I could only do this in a co-op program like Grumman's. It really gives a college engineering student a boost — I mean, how many kids fresh out of college can say they have two or three years of real work experience already.

Can't get enough. *Peter Denardis, a junior from Northeastern University working on the F-14D Program in Plant 1 says the work experience that he has gained through the program has 'whetted my appetite to get out into the field and make a career in engineering.'*

people

NASA awards. *Co-authors of a technical brief (Above, L to R): Dr. David Larson; William Poit; Dr. Robert Silberstein; and Bonnie Dressler, picked-up NASA Certificates of Recognition and $100 cash awards from Grumman Vice President and Chief Engineer Will Bischoff (R) for their inventive work on NASA contracts. Bischoff presented a similar award to thermodynamics engineer Joe Alario (below).*

Inventive awards

Five Grummanites were recently awarded Certificates of Recognition for their inventiveness by the National Aeronautics and Space Administration. The certificates were presented to them by Will Bischoff, vice president and chief engineer, along with cash awards of $100 each.

Joe Alario, a project engineer in thermodynamics, Plant 25, received his award for work he did on a NASA contract. As the result, a new invention was born — the Multi-Leg Heat Pipe Evaporator. This invention was later patented by NASA.

The monogroove high capacity heat pipe is capable of two kilowatts heat transport, but requires a compact heat input zone, or evaporator, for practical considerations. The evaporator design is a single length that is a continuation of the rest of the heat pipe, but this would be too long for high capacity designs.

The present innovation creates multiple parallel legs for the evaporator while still maintaining wick continuity with other sections.

Alario joined Grumman in 1963 and has worked continuously in the areas of heat transfer and thermodynamics, except for a two-year participation in the Professional Development Program.

Also receiving certificates were Bonnie Dressler, Dr. David Larson, William Poit, and Dr. Robert Silberstein, who coauthored a technical brief on thermelectric transient effects during Peltier Interface Demarcation (PID).

The study of the growth of semiconducting and detector crystals sometimes requires a record of the position, shape, and rate of advance of the solidification interface. To do this, the technique of PID is used. It involves passing a series of current pulses through a sample during solidification, which enables the solidification velocity to be precisely ascertained.

Dressler is an associate research engineer and has worked on a variety of programs since joining Grumman in 1976. A research technician, Poit joined Grumman in 1960 and has worked continuously in materials science.

Larson is staff scientist in the Research Center and has participated in numerous space-related experiments in his 22-year Grumman career. A senior research scientist, Silberstein joined Grumman in 1982 and works in the area of solid-state physics.

Eta Kappa Nu

Cecilia Jankowski, an electrical engineer in Computer Design, Plant 35 Engineering Department, has received honorable mention among Eta Kappa Nu's outstanding young electrical engineers for 1984.

Eta Kappa Nu is the national electrical engineering honor society, and Jankowski is the first woman honored by the organization. There was one national award given, three finalists, and three honorable mentions. Jankowski will receive her award at the society's awards banquet, to be held in New York City April 22 at the Omni Park Central Hotel.

The banquet coincides with Electro '85, the IEEE national conference. Jankowski is on its roster of speakers, addressing a tutorial session on engineering workstations.

A Grumman Masters Fellow who recently completed her M.S.E.E. at Polytechnic Institute of New York, Jankowski has been a Grummanite since 1981. Presently she heads a project to implement a computer aided design and manufacturing (CAD/CAM) system in electrical design areas. She is also a council member of the Long Island chapter of the American Association of Aeronautics and Astronautics.

Cool TRIP

Dr. Patrick Barry didn't see much evidence of the "Greenhouse Effect" in his recent trip to Phoenix as the first winner of Grumman's Travel Reservation Incentive Program (TRIP).

Snowy Phoenix? *Grummanite Dr. Patrick Barry and wife Kathleen enjoyed their TRIP award vacation in Arizona despite cool weather.*

Barry, a space programs director in Plant 105, and his wife Kathleen, probably thought sunshine and warm breezes were a sure bet for this corner of the Sunbelt. What they got instead when they landed in Phoenix was 28 degree weather and faint wisps of snow flurries.

"The weather was rather cold and blustery for the entire time we were in Phoenix, which I had been told was not typical," Barry says. "But, we still had a wonderful time."

The trip gave the Barrys a chance to visit old friends in Phoenix and Tucson. They also enjoyed their accommodations at The Pointe resort, which were rather sumptuous — theirs was a two-room suite complete with a wet bar. Nearby were a sauna, jacuzzi, and a well-heated pool, which Barry braved.

Barry rarely gets an opportunity to visit Arizona, and his wife never does. So despite the chill, they enjoyed their stay.

'Woman of the Year.' *The Business and Professional Women's Club of Nassau Inc., celebrated its 45th anniversary recently by honoring Grummanite Mary E. Chisholm as the organization's 'Woman of the year.' Chisholm is assistant to Grumman Senior Vice President Pete Oram and the Assistant District Director for the Nassau BPW. Presenting the award are: (L to R) Eleanor Vecchione — President, BPW of Nassau County Inc.; Gladys Wiedrich, President-Elect of the New York State BPW; Helen Long — 1st vice president, BPW of Nassau County Inc; and Chisholm.*

Cost tracking: computerized 'punching in'

That old symbol of work life, the manual time card, is fast becoming a thing of the past in some departments at Grumman.

In its place is gradually being installed a network consisting of electronic black boxes, "wands," display terminals, minicomputers, and digital clocks. Combined they form Grumman's Cost Tracking System.

The system is now used in 22 production departments in Bethpage, including areas concerned with detail parts and subassemblies. About 650 Grummanites "punch" into the system each day. It's also on tap for 12 departments in Plant 3 and another 12 at Milledgeville, Georgia.

The benefits of the automated system include more timely and detailed data collection and cost tracking, as well as a direct interface with the new manufacturing schedule management system now in operation in many Grumman plants.

"The Cost Tracking System is going to help us compete better in the aerospace world — that's the whole purpose of it," says John Lenahan, project manager for cost tracking. "Companies have to keep track of charges in great detail and very accurately, while being cost effective. This lets us do that, and it also helps achieve more precise parts cost estimates."

Another major aerospace contractor has installed a similar automated system, but unlike Grumman's, that installation was mandated by the government. The government sought more accurate cost tracking. But contractors benefit from these new systems, too. For example, by improved scheduling and determination of costs for each work order, the company that uses such a system might be able to submit a lower bid — giving it an edge in the marketplace.

At each work area is a digital clock, which people use to "clock in" each day. The employee inserts his or her Grumman badge into the machine, which "reads" the black magnetic stripe on the back of the badge. This is, by the way, the same type of stripe that appears on the backs of automated teller machine cards.

Data is transmitted to a remotely located IBM 8100 minicomputer, of which there are six in Bethpage. Each departmental clerk or foreman has a VDT which can display information on his or her responsibility area.

These six minis are wired into a large mainframe computer located at Data Systems in Headquarters. Each week, it in turn feeds necessary information into Payroll's mainframe for producing paychecks, and accounting for labor charges to bill the customer.

Manufacturing crews use the system throughout their daily work routine. Each work order for an aircraft part has a route, and at each step along the way, a person uses the wand to record the completion of his or her activity on a particular order.

The wand is a small hand-held device with a lighted tip that reads the mag stripe. Records of time and labor can thus be kept according to each part, and the ultimate result is an accurate part cost history for future estimates.

System users seem to prefer the system to the old manual methods. Irene Regan, a bench mechanic in Department 024-Steel Parts Assembly who is now in her seventeenth year as a Grummanite, says the system has numerous benefits.

Everyday technology. *Armand Jalbert now uses his Grumman badge to clock in at the beginning of a work day.*

For example, "you don't have to worry anymore about filling out your timecard, since that is all done automatically," she comments. "I feel it's a good system."

The old way meant that each day, a person had to enter the day's work order job charges onto his or her time card. This is a tedious, time-consuming step requiring someone to accurately record sets of 12 digits. In addition, the person had to record the time spent on each separate job. Now all the information is entered by just waving the wand, and it forms one's daily work record.

Regan says her coworkers are equally enthusiastic. "I think everybody's fairly happy with the system," she says. "I haven't heard any complaints about it."

Al Siani, prior foreman of Department 038, notes: "With this system, I can keep better track of the jobs and people in the department. This means better planning and scheduling of work."

Mary Gilmartin is the clerk for Departments 038 and 024 and has been using the Cost Tracking System since last March. "For my purposes, this system is more efficient than the manual time cards," she states.

The system operates round the clock — seven days a week, 24 hours a day.' By performing an automated "roll call" on her terminal, Gilmartin can keep track of which people are working there, whether they are on loan from another department, those who haven't clocked in, those on vacation, and even people who forget their badges in the morning. She can even check for errors in data entry.

Providing a better picture of what costs make up the final product, where these might be trimmed, and improved manufacturing scheduling will mean a well-satisfied customer. That spells a strong competitive posture for Grumman.

Roll call. *Using the system, Mary Gilmartin and Al Siani keep better track of work orders and people in their department.*

Obituaries

RICHARD M. KNOLL of Jigs and Fixtures, Plant 2, died January 24 at the age of 62. He had been with the company since 1948 and resided at 33 Mountain Ave., Bayville, N.Y.

BERTRAN J. DURETTE of Flight Avionics, Plant 4, died January 31 at the age of 43. He had been with the company since 1963 and resided at 111 Fawn La. East, Centereach, N.Y.

HOWARD REED of Electric Cable Fabrication, Plant 44, died February 3 at the age of 42. He had been with the company since 1980 and resided at 94 Glenmalure St., Amityville, N.Y.

WILLIAM WEBSTER of Plant Protection, Plant 18, died February 10 at the age of 67. He had been with the company since 1966 and resided at 12 Walnut Place, Oyster Bay, N.Y.

STEVEN W. SOMMERS of Maintenance, Plant 3, died February 12 at the age of 31. He had been with the company since 1975 and resided at 185 Whitehall Rd. So., Garden City, N.Y.

FRANK J. SCHROEDER of Honeycomb Department, Plant 3, died February 12 at the age of 61. He had been with the company since 1963 and resided at 42 Gladstone Ave., West Islip, N.Y.

WILLIAM G. PERSHYN of Electro Environment Effects, Plant 40, died February 9 at the age of 48. He had been with the company since 1973 and resided at 933 Huntington Pl., Uniondale, N.Y.

news briefs

Former Sen. Brooke elected to board

Edward Brooke, a Washington attorney and former U.S. senator from Massachusetts, has been elected to the Board of Grumman Corporation.

Brooke was elected by the board to serve until the annual shareholders meeting in April, when he will stand for election to a three-year term.

"Ed Brooke's experience and vision of the future will add a new dimension to Grumman's policy decisions," comments Grumman Chairman Jack Bierwirth. "At a time when the company is reorganizing, he will help us take advantage of new opportunities for growth and diversity."

Brooke is a partner in the Washington law firm of O'Connor and Hannan and is of counsel to Casplar and Bok, Boston. A native Washingtonian, Brook graduated from Howard University in 1940 with a bachelor of science degree. He served as a captain in the U.S. Army during World War II and was decorated with the Bronze Star, Combat Infantryman's Badge and the Distinguished Service Award.

Brooke received his legal education at Boston University, earning the LL.B and LL.M degrees in 1948 and 1949, respectively. He was editor of the Law Review from 1946 to 1948.

Brooke was elected to a four-year term as attorney general of Massachusetts in 1962. In '66, he was the Republican nominee for U.S. Senate. His election was historic — he was the first black elected to the Senate since the Reconstruction era.

He served two terms in the Senate and, as a ranking member of the Senate Committee on Banking, Housing, and Urban Affairs, Brooke made his presence felt in the area of housing. Key Federal legislation still bears the name, the "Brooke Amendment." He was also a member of both the Senate Armed Services and Defense Appropriations committees.

Academia

In today's business, technological smarts are the name of the game. To this end, the sixth annual Grumman University Technology Forum provided schools with a picture of what goes on inside a high-tech company, and what talents such a company requires.

The Forum attracted about 50 professors, department heads, and deans from most northeast engineering schools, and schools in such far-flung locations as Michigan, Texas, Florida, and Colorado. Additionally, West Point and Annapolis were represented among the military academies, as was California's Stanford University. The underlying theme for the two-day event was "The Integrated System."

"The forum provides Grumman with an opportunity to establish a line of communication with universities at the same time that it seeks to recruit their best engineering graduates," said Bruce Hausser, Engineering department administrator and coordinator of the Technology Forum. "The forum also is a means for the university to visit industry. It gives the professor or dean an understanding of what subjects are needed to prepare graduates for careers in industry."

Attendees were treated to a newly revised multimedia presentation about Grumman, and a screening of "Forward to Excellence." The latter is the film tracing the history of experimental aircraft, which debuted at last year's annual meeting and was also featured at the August X-29 rollout ceremony. The group was also given a tour of the Engineering Development Center and E-2C laboratories in Plant 14.

A highlight was the dinner program on the first night. Guest speaker was Mark Drela, a graduate student at Massachusetts Institute of Technology. His talk included a series of slides taken before, during, and after the flight of "the Monarch Human-Powered Aircraft" over the English Channel. Drela built this unique plane himself and flew it by pedalling it like a bicycle.

Hausser said the University Technology Forum receives consistent high marks. "We always send out a follow-up questionnaire to those who attend the forum," he noted. "We get good feedback, and many have responded that the program is one of the best of its kind they've ever attended."

Dedication. *The ribbon was cut at NAS Norfolk for the third E-2C Tactics Trainer recently. At front are Capt. John Condon, Cmmdr., Wing 12; Richard Stevenson, program manager, Grumman; and Capt. Len Oden, commanding officer of VAW 120. Looking on are Lt. Paul Baszner, Lt. David Vinci, COTR Paul Michaels, NAS Norfolk Commanding Officer George Hesse, and Capt. Dale Myers.*

EIP annual meeting set for March 28

Get your financial questions ready. The annual meeting of the Grumman Employee Investment Plan will take place Thursday, March 28.

All plan members are invited to attend the meeting, which starts at 5 p.m. in the Grumman Headquarters auditorium.

Representatives of the firms that manage the equity, fixed income, and guaranteed income funds will be present as well as representatives of the bank recordkeeper.

In addition to hearing reports on the performance of the plan's funds over the past year and projections of their future performance, you'll have the opportunity to ask questions of the plans' managers.

So that a maximum number of inquiries may be answered, the EIP office suggests that you fill out the form on this page if there are certain topics you would like discussed. These suggestions are important — the evening's agenda is usually planned around them. Mail your inquiries to the Employee Investment Plan, C15-GHQ.

Those of you who are unable to attend will be able to read a summary of the meeting in an upcoming issue of *Plane News.*

Investment plan inquiry

I'd like to have the following topic discussed: .....

.....

.....

.....

Mail to: EIP, C15-GHQ

Summer jobs

Summer employment applications forms for daughters and sons of Grummanites are available at all Employee Services offices and in the Employment office.

Those seeking summer employment must be active, fulltime students who have completed at least one year of college by summer 1985, are not graduating this June, and are continuing their education fulltime in the fall toward an associate or bachelors degree.

This year's program will run a minimum of eight weeks and a maximum of 10 between May 28 and August 30.

Summer positions are limited. Selections are based on the years of company service of the parent, student interest, and availability of job openings.

Deadline for submitting applications is Friday, April 5. If you have any questions or need more information about the program, call Renee Cox, Ext. (111) 59385, or Peter Portanova, Ext. (111) 50683.

Retirees

On behalf of our fellow workers, PLANE NEWS salutes the following for their contributions to the company and wishes them well in their retirement. Those who have recently retired are:

Charles Acker (43), Otis A. Adams (2), William N. Birnbaum (40), Jennie Della-Pietra (30), Dominick Grisanzio (15), Mary Madsen (3), Theodore J. Martines (5), Maria A. Massa (111), Melanie J. Spencer (GDS).

scorecard

Rolling results

Members of the Grumman Men's and Women's varsity bowling teams combined to roll up a fine performance in the annual Pan American Mixed Bowling Tournament, held February 23 at the Mid Isle Lanes in Hicksville.

The mixed squad consisted of top varsity rollers Marie Buttacavoli, Maureen Croes, Ed Gabriel and Neil Napolitano. The foursome managed to roll up a total pin score of 2274 to place third in the Champion division of the tournament behind scores of 2302 by second place Sperry and 2322 by the first place Nassau County team.

In the Incentive division the Grummanite bowlers finished with a plus — 69 rating good enough for eighth place in the 16-team field.

Grumman's Napolitano took first place in the Individual Awards with games of 204, 269, and 214 for a tournament high series of 687. Napolitano's teammates bowled as follows: Buttacavolli — high game 195, series 522; Croes — 187, 495; Gabriel — 204, 570.

Hoopster hoopla

The Grumman varsity basketball team recently captured the first place title in the tough Glen Cove Open League with a spirited 83 to 63 romp over the Swarm.

The game was close until the Tomcats pulled away in the third quarter behind the rebounding and shooting of Paul Blinn who ripped down a team high 12 rebounds while scoring 20 points. Blinn also added two steals as the Tomcats took the ball away from their opponents nine times.

Joining Blinn in the winning effort were Rick Cooke with 17 points, 10 assists, two steals and five rebounds; Fred Turner — 16 points, 15 assists, three steals and six rebounds; Columbus Poole — 12 points, six rebounds; and Kent Miller, who added eight points and five rebounds as well as a fine defensive effort.

The victory gave the Tomcats a record of 14 wins and no losses in the Glen Cove league where they finished with a considerably less impressive 3-11 record last year. "Last year we made the mistake of entering the "A" League in Glen Cove with a team whose tallest player was only about 6'4". This year we went into the "B" division. As it turned out, we ended up with a considerably taller and stronger squad, and it has made quite a difference," points out Tomcat manager Ron Knight.

The varsity hoopsters are taking their undefeated record into the Glen Cove playoffs where they are a strong favorite to win the championship this season.

Undefeated season

The team is also undefeated in play in the Long Island Industrial Basketball League (LIIBL), where their record stands at 6-0. Having finished last year undefeated in the LIIBL only to lose the championship to IBM, Knight says his team is "more than a little eager to avenge themselves," and he expects to walk away with that title as well this year.

The varsity will also participate in the Eastern States Tournament held in Valley Forge, Pennsylvania at the end of March. The trip will be the Tomcat's fifth to the tourney. "I'm looking forward to taking one of the strongest teams that we've had in some time down to the Eastern States Tourney and really making an impression this year," says Knight.

Intramural action

While the Grumman varsity basketball team is tearing up the courts in the Long Island Industrial and Glen Cove Open leagues, Grumman's Intramural Basketball League squads are offering a few thrills as well.

While the level of play can not exactly be described as that of the NBA, the action has been nothing if not spirited and exciting as over 100 Grummanite hoopsters vie for company bragging rights this year.

With half the season already over, last year's league champs, the Grabbers, are locked in a battle for first place with the Royals with records of 10-1 and 9-1 respectively. Close behind are the Saxons at 8-2 and last year's second place team, the Brutal Bunch, at 6-5.

The eight team league is rounded out by the MD's, at 5-5; the Hellcats, 1-9; Sureshots, 1-9; and Trotters, 1-9. League play takes place every Monday and Tuesday at the Campagne School in Bethpage at 5:30 p.m.

Four-wall tourney

If four wall action is your game, then this is what you've been waiting for. Grumman Recreation's sixth annual Racquetball Tournament is on tap for Saturday and Sunday, April 13 and 14. The tourney will be held at the Royal Racquetball Courts on Middle Country Road in Coram. Entry is restricted to full-time Grumman employees.

The entry-fee for one division this year is $23 and playing in both the singles and doubles categories will cost you $29. The entry fee must accompany your entry form at sign-up.

The Recreation Office requests that entrants not mail cash — rather, send checks payable to Royal Racquetball. Entry deadline is Thursday, March 29.

Winners in this year's event will receive first and second place trophies, with gift certificates awarded to third and fourth place finishers. Entry fees also cover refreshments, T-shirts, court fees and a guarantee of playing two matches.

Entrants who won a division title in last year's tournament must move up to the next division this year. In doubles competition, each team must enter the highest division in which either player is participating. Entrants may play in only one doubles division.

Games will begin at approximately 9 a.m. and end about 7 p.m., with singles play preceding doubles. Entrants can get their starting times by calling Royal Racquetball on or after April 4 at (516) 732-5500. Players are expected to check in at the courts one half hour prior to their start times. All entrants are advised to bring their own locks and towels.

Egg league call

All women interested in playing softball this upcoming season with the Thursday night Egg League should contact Gail Allen, C04-14, Ext. 50945. The season begins April 5.

Racquetball tourney

Entry form

Your name .....

Mail stop .....Perm. No. .....Ext. .....

Men's Division

Singles' division: ☐ A ☐ B ☐ C Senior (40ys & over)

Doubles' division: ☐ A ☐ B ☐ C

Women's Division

Singles: ☐ Intermediate ☐ Novice

Doubles: ☐ Intermediate ☐ Novice

Partner's name .....

Perm. No. .....Ext. .....

Deadline March 29.
Mail to: A01-28A

calendar

AIAA: Thurs., March 21, Antun's Old Country Manor, Hicksville, 5:30 p.m. Dinner meeting, topic will be "Earth's Exploration of the Solar System 1985 — 2000." Guest speaker will be Louis D. Friedman, Executive Director of the Planetary Society. Guests welcome. J. Kohn, Ext. 58754.

GACE Flying Club: Mon., March 18, Boces Bldg., Hicksville, 5:15 p.m. Monthly membership meeting. Guests welcome. Bob Schulte, Ext. 50682.

Grumman Disabled American Veterans: Wed., March 20, Plant 3 cafeteria, 4 p.m. All disabled american veterans are welcome. O. Lewis, Ext. 54476.

Grumman French Club: Mon., March 25, 108 N. Windhorst Ave., Bethpage, 5:30 p.m. Educational program. Guests welcome. Louis Kaufman, Ext. 52323.

Grumman Retiree Club: Wed., March 27, Recreation Bldg., 1 p.m. Business meeting. Guests welcome. E. Drasser, Ext. 52133.

Grumman Tennis Club: Wed., March 20, Recreation Bldg., 5 p.m. First meeting of 1985, new members encouraged to attend. Tennis video after business portion of meeting. P. Hatcher, Ext. 52085.

Continued on next page

Softball stars. *The Tomcat varsity softball team is getting ready for another winning season this year with tryouts for the team scheduled throughout April. Pictured with their cache of trophies from last season is the 1984 Tomcat squad: (L to R front) Wayne Wright; Bob Madarasz; Tony D'Ambrosio; manager — Joe Cavalluzzo; Tom Marion; Lou Volpe; Tony Ferraro; (rear) Larry Bates; Bill Ostrosky; Mike Gallo; Mark Cleary; Karl Komyathy; and Bob Beattie. Missing from the picture are: Nick Catania; Rick Smith; Rich Chatterton; Jim Verteramo, Jr.; and coaches - Jim Verteramo, Sr. and Bill Dierks.*

Varsity softball team is Holding open tryouts in April

Sandlot sluggers and arc-ball enthusiasts take note. The Grumman Varsity Softball team has announced the opening of its 1985 tryouts. Tomcat manager Joe Cavalluzzo says all positions on the softball super-squad are open to competition this year.

The tryouts will take place each and every Tuesday and Thursday in April at 4 p.m. on the Plant 3 softball field. There will also be special weekend tryout opportunities on Sundays, April 14, 21 and 28 at 10 p.m. on the same Plant 3 field.

Cavalluzzo says he is hoping the open tryouts will attract the "very best of Grumman's softball players," and enable the Tomcats to surpass the team's "sterling achievements" of last year.

Topping their 1984 performance, however, will not be an easy task. Last year the Tomcats finished the season in first place in the Nassau County Major Softball League at Cantiague Park, Hicksville, and placed second in the Suffolk County Major Softball League at Brookhaven.

The hard hitting Tomcats also won the Independence Day Tournament held at Mitchell Field with shortstop Karl Komathy taking the tourney's Most Valuable Player award.

In the National Tournament held over the Labor Day weekend in 1984 in Montgomery, Alabama, the team placed 11th out of the 74 teams competing.

On the year, shortstop Komathy of Plant 30 led the team in hitting — posting a remarkable .535 average, while outfielder Larry Bates of Plant 25 led the squad in the "longball" category, with a "Ruthian" 26 homeruns.

Along with varsity coaches Bill Diercks and Jim Verteramo, Cavalluzzo says he is looking forward to "blending some new talent with our excellent group of veteran players for the best Tomcat team in years."

Get your rosters ready

Recreation-sponsored softball leagues will be holding organizational meetings soon, so managers are advised to get their rosters ready. If you do not have a temporary roster sheet, see your plant softball commissioner. Teams must send a representative to the meeting of the league they plan to enter to be eligible for play. The following is this year's meeting schedule.

Plants 1 and 4 Lunchtime League — Monday, April 1, 12 noon, Plant 1 rec area; commissioner Roe Strazzeri, Ext. 55431.
Plants 2 and 5 Lunchtime League — Tuesday, April 2, 12 noon, Plant 2 conference room; commissioner Bill Arnold, Ext. 58854.
Plant 3 Lunchtime League — Wednesday, April 3, 12 noon, Plant 3 conference room; commissioner Grant Thompson, Ext. 52495.
Plant 6 Lunchtime League — Thursday, April 4, 12 noon, A-6A briefing room; commissioner Ernie Maggi, Ext. 117-6772.
Plant 7 Lunchtime League — Thursday, April 4, 11:30 a.m., Plant 7 cafeteria; commissioner Pete Guido, Ext. 117-7087.
Plant 43 and 44 Lunchtime League — Friday, April 5, 11:30 a.m., conference room; commissioner Robert Albert, Ext. 113-6277.
Bethpage Nite Owls League — Thursday, April 11, 9 p.m., Plant 2 conference room, commissioner Chas Hess, Ext. 52628 or Bill Wallace, Ext. 52842.
All After Hours Leagues — Tuesday, March 26, 5 p.m., Plant 28A office (Note: Friday Nite League openings are available.)

Carpools

Brooklyn (Kings Hwy., Ocean Pkwy.) to Bethpage, Plant 1: 7:48 am to 4:18 p.m. Start or join existing car pool. Wladyslaw Zajac, Ext. 50504 or (718) 645-7282.

East Norwich (Oyster Bay) to Bethpage Plant 1: 7:48 am to 4:18 pm. Start or join existing car pool. M. Slade, Ext. 50507 or 922-6142.

calendar

(Continued from page 11)

Robotics International of the Society of Manufacturing Engineers L.I. Chapter: Mon., March 25, Polytechnic Institute of N.Y., Farmingdale, 8:30 p.m. Topic will be "State-of-the-Art Robotic Applications in the Aerospace Industry". Guest speaker will be Claus Nielson, Manager, Robotic Engineering, Unimation Corp. Guests welcome. P. Cancellieri, 265-5535.

Society of Logistics Engineers: Tues., March 26, Antun's Old Country Manor, Hicksville, 5:30 p.m. Monthly dinner meeting. Guests welcome. Paul DiBeneditto, Ext. 56428.

Society of Manufacturing Engineers: Fri., March 29, Huntington Town House, Huntington, 8:30 p.m. Annual installation dinner dance. Guests welcome. V. Pavlik, Ext. 55255.

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